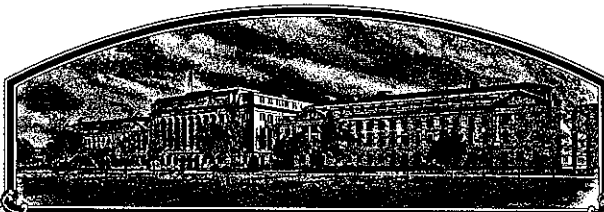


No.

8600153



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The Ohio State University Research Foundation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'GR 855'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 30th day of September in the year of our Lord one thousand nine hundred and eighty-eight.

Attest

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426)

1. NAME OF APPLICANT(S) The Ohio State University Research Foundation		2. TEMPORARY DESIGNATION OH 235	3. VARIETY NAME GR 855
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 1314 Kinnear Road Columbus, Ohio 43212		5. PHONE (Include area code) 614-422-6079	FOR OFFICIAL USE ONLY PVPO NUMBER 8600153
6. GENUS AND SPECIES NAME <u>Triticum aestivum L.</u>	7. FAMILY NAME (Botanical) Graminae		FILING DATE <u>August 11, 1986</u> TIME <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. KIND NAME Soft Red Winter Wheat	9. DATE OF DETERMINATION 9/28/84		FEES RECEIVED AMOUNT FOR FILING \$ <u>1800.00</u> DATE <u>August 11, 1986</u> AMOUNT FOR CERTIFICATE \$ <u>200.00</u> DATE <u>August 25, 1988</u>
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Non-profit corporation			12. DATE OF INCORPORATION 11/2/36
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Ohio			
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. H. N. Lavever or James B. Wilkens Agronomy Department 204 Ohio State University Research Ctr. Ohio Agricultural Research and Development Center 1314 Kinnear Rd., Columbus, Ohio 43212 Wooster, OH 44691 Phone: 216-263-3886 PHONE (Include area code): 614-422-6079			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B. Novelty Statement. c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of Variety. e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of Applicant's Ownership.			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83.1 of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> Foundation <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No			
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? U.S., September, 1985 (Sold as Foundation generation seed to producers of Certified class seed). <input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input type="checkbox"/> No			
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT <u>Howard N. Lavever</u> (Breeder)		DATE <u>5/15/86</u>	
SIGNATURE OF APPLICANT <u>Kenneth W. Loo</u> (Executive Director, OSU Research Foundation)		DATE <u>8/8/86</u> 1	

Exhibit AOrigin and Breeding History of the Variety

1. GR 855 (previously designated OH 235) originated at the Ohio State University, Ohio Agricultural Research and Development Center from the cross of Hart with a Virginia experimental line, designated Va. 66-54-10, which was never released as a variety. The cross was made in 1972 and designated 22272. GR 855 was first selected in 1975 as an F₃ plant and reselected in the F₇ generation in 1979 as described below. The pedigree 22272-26 was used to designate this line in early tests until it was assigned the designation "OH 235". This line is a sister line of 'Becker'.
2. Breeder seed of GR 855 consists of a bulk of the progeny of 17 F₇ plants selected for uniformity in 1979 and later years. Progeny growouts of these 17 plants appeared phenotypically identical and homozygous in the F₈, F₉, F₁₀, and F₁₁ generations before they were bulked at harvest in 1983 as seed from F₁₁ plants. (Progeny of 60 F₇ plants constituted the original selection in 1979 with progeny of 43 lines being dropped in the F₈ through F₁₁ generations as being off-type.) The first distribution of Foundation generation seed was made in the fall of 1985 to producers of Certified seed.
3. GR 855 appears to be very uniform and homozygous as observed in the field over the past 6 seasons. This was expected of the progeny of phenotypically identical plants selected in F₇ and reexamined for uniformity in the F₈ through the F₁₁ generations.
4. GR 855 appears to be stable and true breeding as evidenced by agronomic and pathological examination of the F₈ through F₁₁ generations in special purification and increase nurseries.
5. Variants observed during the development of the variety were few in number and of various, non-repeating phenotypes. In the 1985 Foundation generation production fields some repeating phenotype deviants were observed. These included taller plants, awned or semi-awned plants and brown chaffed plants. The total of such types did not exceed .5%. Other variants occasionally observed generally appeared to be the results of admixtures or outcrosses.

Roguing of all observed off-types was performed four times in the bulked Breeder seed increase of 1984 (F₁₂) and three times in the Foundation generation increase of 1985 (F₁₃).

Since GR 855 is extremely short and erect, admixtures or outcrosses are easily observed and can be rogued.

Criteria for selection during the multiplication and purification process (F₈-F₁₁) allowed no variance from complete uniformity. If one off-type plant was observed in a 10' row, that plant was either rogued or the row

8600153

dropped from further increase. If two or more off-type plants were observed within a row, the row was eliminated from further increase. The 17 remaining line descendants of selected F₇ plants were extremely uniform in appearance and disease reaction.

The variety was selected primarily for high yielding ability and extreme straw strength. Additionally, selection for all other important agronomic and quality traits was exercised. The variety was selected in comparison to popular varieties in Ohio, namely, Adena, Hart, Titan, and Tyler. It was also tested against Becker, a sister line.

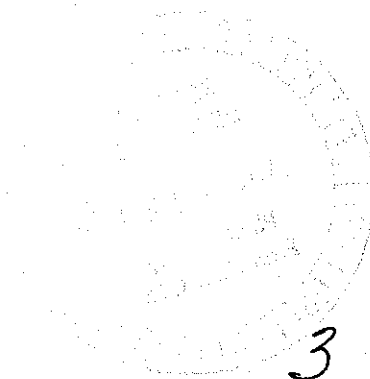


Exhibit BNovelty Statement and Botanical Description of the Variety

GR 855 is an extremely short, early maturing variety of soft red winter wheat with dark green foliage. Straw strength is exceptionally high, being greater than any other currently grown variety in the same test during its development and evaluation. At maturity the heads of GR 855 remain fully erect. At heading the flag leaf is either erect or recurved depending on the level of fertility of the site. Winterhardiness under Ohio conditions is excellent. Late fall and early spring growth is mostly prostrate, however, the variety exhibits relatively rapid reinitiation of growth in the spring and the transition from prostrate to upright juvenile growth is relatively rapid. Leaves appear mid-wide and mid-long compared to other standard varieties of soft red winter wheat such as Arthur, Ruler, and Logan.

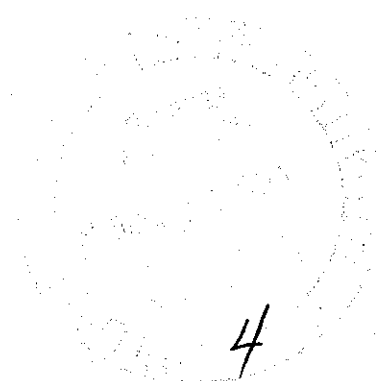
GR 855 is moderately sensitive to acid soil conditions and is resistant to field infections of loose smut (Ustilago tritici). It has excellent resistance to powdery mildew (Erysiphe graminis f. sp. tritici) under Ohio conditions, but is susceptible to leaf rust (Puccinia recondita f. sp. tritici). GR 855 is very resistant to wheat spindle streak mosaic virus (WSSMV). Other pathogens of wheat have not occurred in Ohio frequently enough to adequately document the response of GR 855 to them.

GR 855 possesses the H₃ gene for resistance to races GP, A, C and F of Hessian fly (Mayetola destructor, Say).

GR 855 heads one day earlier than Adena and approximately two days later than Arthur in Ohio tests. Heads are fusiform, mid-dense with yellow anthers. Glumes are mid-wide to wide with rounded to mostly square glume shoulders. Heads are apically awnletted with tip awns 1-2 cm in length.

GR 855 most closely resembles Adena, however its height averages 2.5 cm shorter and it heads one day earlier. Phenol reaction of GR 855 is brown-black while that of Adena is fawn.

GR 855 also closely resembles Becker, a sister line, however it heads two days earlier and possesses excellent resistance to powdery mildew and is susceptible to leaf rust while Becker is susceptible to powdery mildew and possesses moderately good resistance to leaf rust. These two varieties also differ in phenol reaction and glume characteristics.



Addendum to Exhibit B, paragraph 5

Submitted 6/3/88 for 'GR855', Application No. 8600153

Further testing of phenol reaction of GR855 revealed that the color of this variety is a "brown-black" and should be classified in Section 16, Exhibit C form as (4) - brown rather than (3) - lt. brown.

GR855 also possesses the H_3 gene for resistance to Hessian fly (*Mayetola destructor*, Say) while 'Adena' possesses the H_7 and the H_8 genes for resistance. Thus, GR855 is resistant to races GP, A, C, and F of Hessian fly while Adena is resistant to only race GP.

Correction to Exhibit C, Section 16

Phenol reaction should read 4 (brown) rather than 3 (lt. brown).

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
BELTSVILLE, MARYLAND 20785

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

INSTRUCTIONS: See Reverse.

WHEAT (TRITICUM SPP.)

NAME OF APPLICANT(S) Ohio State University, Ohio Agricultural
Research and Development Center

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

1680 Madison Avenue
Wooster, OH 44691

FOR OFFICIAL USE ONLY

PVPO NUMBER

8600153

VARIETY NAME OR TEMPORARY DESIGNATION

GR 855

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g., 089 or 09) when number is either 99 or less or 9 or less.

1. KIND:

1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = PQLARD 7 = CLUB

2. TYPE:

2 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 1 1 = SOFT 2 = HARD 3 = OTHER (Specify)

2 1 = WHITE 2 = RED 3 = OTHER (Specify)

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

225 FIRST FLOWERING 230 LAST FLOWERING

4. MATURITY (50% Flowering):

NO. OF DAYS EARLIER THAN 1 1 = ARTHUR 2 = SCOUT 3 = CHRIS
01 NO. OF DAYS LATER THAN 1 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (From soil level to top of head):

081 CM. HIGH
 CM. TALLER THAN
10 CM. SHORTER THAN 1 1 = ARTHUR 2 = SCOUT 3 = CHRIS
4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (See reverse):

3 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHR COLOR:

1 1 = YELLOW 2 = PURPLE

8. STEM:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Waxy bloom: 1 = ABSENT 2 = PRESENT
2 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT 1 Internodes: 1 = HOLLOW 2 = SOLID
04 NO. OF NODES (Originating from node above ground) 23 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

1-2 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (Specify): 2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED
1 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT 2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
11 MM. LEAF WIDTH (First leaf below flag leaf) 23 CM. LEAF LENGTH (First leaf below flag leaf):

11. HEAD:

☐ 2 Density: 1 = LAX 2 = DENSE

☐ 1 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) _____

☐ 2 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

☐ 2 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify) _____

☐ 8. ☐ 5 CM. LENGTH

☐ 1 ☐ 0 MM. WIDTH

12. GLUMES AT MATURITY:

☐ 1 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.)

☐ 2-3 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.)

☐ 3-4 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
4 = SQUARE 5 = ELEVATED 6 = APICULATE

☐ 1 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

☐ 3 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

☐ 1 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

☐ 1 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

☐ 1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

☐ 1 Cheek: 1 = ROUNDED 2 = ANGULAR

☐ 2 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

☐ 1 Brush: 1 = NOT COLLARED 2 = COLLARED

☐ 3 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN
4 = BROWN 5 = BLACK

☐ 3 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

☐ 0 ☐ 6 MM. LENGTH

☐ 0 ☐ 4 MM. WIDTH

☐ 3 ☐ 0 GM. PER 1000 SEEDS

17. SEED CREASE:

☐ 1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

☐ 1 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 STEM RUST (Races)

☐ 1 LEAF RUST (Races) Various (field)

☐ 0 STRIPE RUST (Races)

☐ 2 LOOSE SMUT

☐ 2 POWDERY MILDEW

☐ 0 BUNT

☐ OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 SAWFLY

☐ 0 APHID (Bydv.)

☐ 0 GREEN BUG

☐ 1 CEREAL LEAF BEETLE

☐ OTHER (Specify) _____

 HESSIAN FLY
RACES:

☐ 2 GP

☐ 2 A

☐ 1 B

☐ 2 C

☐ 1 D

☐ 1 E

☐ 2 F

☐ 1 G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Caldwell	Seed size	Arthur
Leaf size	Adena	Seed shape	Hart
Leaf color	Titan	Coleoptile elongation	Adena
Leaf carriage	Ruler	Seedling pigmentation	Titan

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

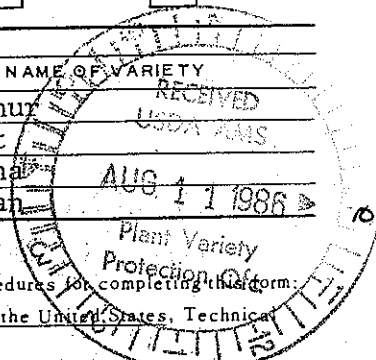


Exhibit DAdditional Description of the Variety

No hairs are normally found on the flag leaf sheath of GR 855 plants, nor on the sheath of the first leaf below the flag leaf (Item 10, Exhibit C).

Glume shoulders range from rounded to mostly square in heads of GR 855 and glumes are mid-wide to wide, often within the same head (Item 12, Exhibit C).

Heads of GR 855 tend to be slightly brittle at full maturity under dry conditions such that breakage at a rachis node will often occur if one exerts leverage on the head. This does not appear to ever cause shattering or head losses in combining operations or under high wind conditions.

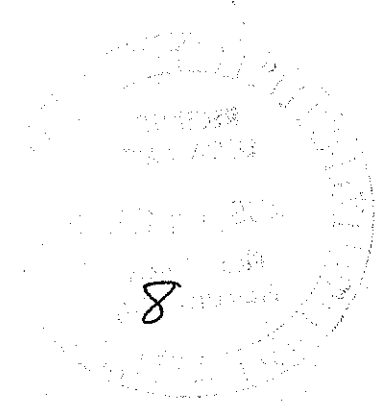


Table 1. Comparative yields (Bu/A) of GR 855 and currently grown varieties in drill plot trials by years, Ohio.

Variety	1980 3 tests	1981 7 tests	1982 7 tests	1983 7 tests	1984 6 tests	Average 30 location-years
Adena	68.3	46.9	58.8	58.1	57.7	56.6
Hart	69.3	52.1	62.5	57.7	55.3	58.2
Titan	71.0	47.9	61.1	60.1	51.3	56.8
GR 855	69.4	52.4	57.8	61.9	56.5	58.4
Tyler	-	-	-	64.2	57.5	-

Table 2. Comparative yields (Bu/A) of GR 855 and currently grown varieties in drill plot trials by locations, Ohio.

Variety	OARDC 1980-84	N.W. Br. 1980-84	W. Br. 1980-84	Mah. Co. 1981-84	S. Br. 1981-84	O.F.S. 1981-83	Veg. Cr. Br. 1981-84	Average 30 location-years
Adena	59.2	73.3	49.4	44.7	52.9	45.1	65.7	56.6
Hart	61.3	70.3	48.3	50.7	59.1	46.4	66.9	58.2
Titan	60.6	67.4	47.2	51.1	57.4	45.0	65.0	56.8
GR 855	67.2	70.1	45.2	49.4	59.7	37.0	73.1	58.4

Table 3. Comparative performance of GR 855 and currently grown varieties in drill plot trials, Ohio, 1980-84. (Average of 30 tests)

Variety	Winter Survival (%)	Pl. Height (in.)	Date Headed (May)	Lodging (%)	Test Wt. (lb/bu)
Adena	97	33	28	7	56.5
Hart	96	37	27	4	57.7
Titan	93	38	31	13	56.5
GR 855	97	32	27	1	54.5

Table 4. Comparative disease and aluminum tolerance ratings of GR 855 and currently grown varieties in miscellaneous Ohio tests.

Variety	% Mildew 9 tests-6 yrs.	WSSM ¹ 6 tests-4 yrs.	G.H. test ¹	Leaf Rust Field- 5-tests-3 yrs	% Scab 1 test	Take-all 1 test	Al. tolerance	
							Avg. yield (% of Seneca)	Avg. score ²
							3 yrs	6 yrs.
Adena	49	.75	7	13 MR	1	3	.51	5.8
Hart	77	1.00	6	28 MS	8	2	.61	6.5
Titan	37	2.00	7	4 MS	3	3	.73	3.5
GR 855	.3	1.00	5	18 MS	10	3	.56	5.2

1 0 = none to 9 = severe.

2 0 = very tolerant to 9 = very sensitive.

Quality Evaluation of GR 855

(Data taken from U.S.D.A. Soft Wheat Quality Laboratory Reports)

In evaluations of composite samples of 14 lines and varieties grown at 6 locations in 1984, GR 855 (OH 235) received a combined quality score of 95.0. Comparative scores for Hart, Tyler and Titan, three widely grown varieties in Ohio were 78.3, 70.5, and 60.9, respectively.

In evaluations of composite samples of 16 lines and varieties grown at 7 locations in Ohio in 1983, GR 855 received a combined quality score of 89.8. Comparative scores of Hart, Tyler, and Titan were 89.7, 79.9, and 85.7, respectively.

In evaluations of composite samples of 15 varieties and lines grown at 7 locations in 1982, GR 855 received a combined quality score of 95.4. Comparative scores of Hart, Tyler, and Titan were 82.2, 88.0, and 81.7, respectively.

(See attached tables 1-3)

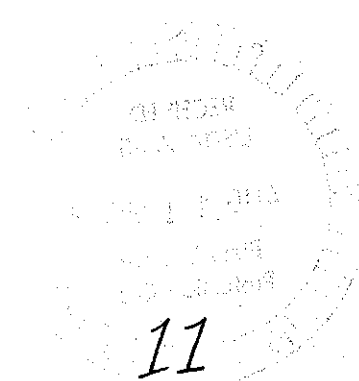


Table 1. Wheat, milling, and flour analytical and baking data, and quality scores. Drill plot entries from Wooster, Ohio, 1984 crop.

WHEAT AND MILLING DATA

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	TEST WT.	BREAK FLOUR YIELD	ST.GR. FLOUR YIELD	RED. PASSES	FRIABILITY	E.S.I. MILLABILITY
***	STANDARD BENCHMARK	100 A	100 A	100 A	62.7	29.8	76.4	7	28.4	11.1
***		105.9A	103.4	105.4	61.6*	35.6	76.3	7	28 *	10.4
057	ADENA	100 A	100 A	100 A	62.7	29.8	76.4	7	28.4	11.1
058	HART	92.8 C	78.3F	78.3F	62.6	32	74.4Q	7	27 Q	12.9*
059	TYLER	100 A	70.5F	70.5F	62.2	32.4	76.2	7	28.5	11.4
060	TITAN	93.6 C	60.9F	60.9F	62.7	33.6	74.8*	7	26.8Q	105.7
061	OH 234	94.5 C	85 D	85 D	62.3	34	75.9	7	27.7Q	93.6 *
062	OH 235	95 B	98.2B	95 B	61.6*	30.5	76.1	7	28.2	11.5
063	OH244	106.5A	103.4	103.4	63.1	30.6	77.6	7	29.2	99.1
064	OH 256	93.4 C	78.4F	78.4F	62.2	32	75.4*	7	27.3Q	9.6
065	OH 257	97.2 B	69.9F	69.9F	63.1	26.8Q	75.9	7	27.7Q	12
066	OH 260	109.7A	93.6C	93.6C	64.8	31.9	77.9	7	29.3	94.8 *
067	OH 262	98.1 B	95.1B	95.1B	61.7*	38	75.6	7	28.6	103.8
068	OH 265	100.8A	89.5D	89.5D	63.1	35.8	76.3	7	29	11.4
069	OH 285	107.2A	113.4	107.4	63.4	29	77.5	7	29.8	9.3
070	OH 286	101.2A	97.2B	97.2B	61.8*	37.2	76.6	7	29.3	11

STRAIGHT-GRADE FLOUR

LAB NO.	FLOUR PROTEIN %	ASH %	MICRO AWRC %	COOKIE DIAMETER CM.	TOP GRAIN
***	9.74	.39	48.4	17.89	4
***	8.9	.35	51.3*	18.35	7
057	9.74	.39	48.4	17.89	4
058	10.9Q	.38	50.3*	17.56*	1*
059	9.01	.39	52.6Q	17.39Q	2*
060	10	.39	51.6Q	17.16Q	1*
061	9.18	.43*	49.7	17.57*	3
062	10.2	.43*	48.3	17.87	4
063	9.4	.39	47.9	17.91	4
064	10.2	.41	50.7*	17.54*	2*
065	10.4*	.38	50.4*	17.33Q	3
066	11.2Q	.38	48.2	17.82	3
067	9.38	.41	51 *	17.91	5
068	9.9	.41	51 *	17.81	3
069	10.1	.39	46.9	18.15	5
070	9.93	.42*	49.9	17.93	3

Table 2. Wheat, milling, and flour analytical and baking data, and quality scores. Drill plot entries from Wooster, Ohio, 1983 crop.

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MILLAB. WT. KG/HI.	WHEAT PROT. %	WHEAT ASH %	PSI %	ESI %	RED PASS FLOUR YIELD	FLOUR YIELD	FRIAB. %
107 10	04260	103.8A	100.3A	100.3A	117.8	78.9	10.4*	38.6	9.1	0	76.8	20.1
***	STANDARD	100 A	100 A	100 A	103.7	77	9.6	40.2	11.7	0	75.4	27.1
036 3	ADENA	100 A	100 A	100 A	103.7	77	9.6	40.2	11.7	0	75.4	27.1
103 13	04285	105 A	98.3 B	98.3 B	119.1	78.3	9.8	37.4*	9	0	76.6	28.1
103 2	04244	107.6A	97.3 B	97.3 B	117.8	77.5	9.3	38.7	9.1	0	77	28.5
***	BENCHMARK	104.8A	96.2 B	96.2 B	112.5	79.3	9.6	39.2	10.4	0	76.6	27.6
109 12	04265	94.5 C	94.2 C	94.2 C	90.5 *	77.3	9.2	44.1	12.1	0	74.5*	26.3 0
111 15	04286	92.5 C	93 C	92.5 C	87.9 *	76.3	9.3	45.2	12.3	0	74.5*	25.3 0
101 4	04234	92 C	92.4 C	92 C	87.1 *	76.3	9.1	46	12.4	0	73.60	25.7 0
105 8	04235	93.5 C	93 C	90.5 C	91 *	76.9	10	39.4	12.1	0	74.9	26.6 *
102 6	04235	93.2 C	89.8 D	89.8 D	93.7	76.5	9.7	38.2*	12.7	0	73.50	25.9 0
097 11	MART	89.7 D	90.5 C	89.7 D	91.4 *	76.2*	10.3*	40	11.8	0	75.4	25.4 0
100 1	04220	94.3 C	88.2 D	88.2 D	96.4	77.3	10.3*	46.9	13.6*	0	73.8*	25.4 0
038 5	04262	87.1 D	85.9 B	87.1 D	80.2 0	75.7*	9.5	44.7	12.9*	0	73.9*	25.9 0
099 14	TITAN	91.0 C	85.7 D	85.7 D	90.6 *	76.7	9.6	39.7	11.6	0	73.6	27.8
104 7	TYLER	102.7A	79.9 F	79.9 F	108.2	77	9	39.1	13.8*	0	72.70	24 0
106 9	04255	78.8 F	87.1 D	78.8 F	79.1 0	78.2	10.80	36.40	12	0	75.2	26.4 0
	04257	85.8 D	74 F	74 F	96.9	78.3	10.80	33.50	12	0		

STRAIGHT-GRADE FLOUR

LAB NO.	PROT. %	ASH %	ADJ. MACM. VISC.	MICRO AWRC %	COOKIE DIAM. CM.	TOP GRAIN
107	9.1	.36	67	47.7	18.67	7
***	7.8	.36	91	48.8	18.31	7
036	7.8	.36	91	48.8	18.31	7
110	8.5	.35	55	49.1	18.7	7
103	7.8	.37	10	48.5	18.21	6
***	8.5	.36	85	50.6*	18.57	3*
109	7.7	.4 0	97	51.5*	18.25	6
111	7.8	.410	11	51.4*	18.17	6
101	7.4	.4 0	82	51.5*	18.12	6
105	8.6	.37	97	50.1	18.32	6
102	8.1	.39*	59	49.4	18.06*	7
097	8.6	.36	78	50.7*	18.22	6
100	9	.39*	91	52.30	18.26	5
108	7.8	.410	10	50.6*	18.25	6
098	8.4	.37	84	51.3*	18.08	6
099	7.6	.35	13	50.6*	17.690	5
104	9.3	.37	73	49.6	18.22	6
106	9	.38*	78	50.4*	17.85*	4

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Table 3. Wheat, milling, and flour analytical and baking data, and quality scores, Drill Plot entries from Wooster, Ohio, 1982 crop.

LAB NO	ENTRY	MILLING QN/ITY SCORE	BAKING QN/ITY SCORE	COMBINED QN/ITY SCORE	WHLG. PCT.	TEST WT. KG/HL	PROT. PCT.	ASH PCT.	WHEAT PART. SIZE INDEX PCT.	ENDOSP. INDEX PCT.	RED. PASS PCT.	BREAK FLOUR YIELD PCT.	FLOUR YIELD PCT.	MILLING SCORE
MILLING STD. = 62002 - RIN AND BAKING STD. = 02002 - RIN AND														
62001	4 HART	96.5 B	62.2 E	62.2 E	10.4	80.0	10.3	1.58	34.7	12.2	9.	29.3	74.3*	99.2
62002	6 RIN AND	100.0 A	100.0 A	100.0 A	10.3	80.2	10.2	1.62	38.1	11.3	9.	30.1	75.8	102.4
62003	9 TITAN	97.7 B	61.7 E	61.7 E	10.1	78.8*	9.6	1.58	35.9*	11.4	9.	31.9	74.7*	99.4
62004	25 TVALER	106.9 A	68.0 D	68.0 D	10.4	78.9*	9.7	1.49	37.1	10.9	9.	31.0	75.6	113.7
62005	10 CH189	103.2 A	100.1 A	100.1 A	10.3	77.9*	9.7	1.45	38.3	11.0	9.	30.6	75.7	109.6
62006	12 CH220	99.8 B	78.3 F	78.3 F	10.4	79.2*	11.0*	1.61	47.1	12.8*	11.	33.5	75.7	104.1
62007	14 CH234	99.5 B	105.0 A	99.5 B	10.3	77.1*	9.5	1.55	41.5	11.6	10.	34.0	74.6*	97.3
62008	15 CH235	95.4 B	97.4 B	95.4 B	10.0	76.9*	9.9	1.54	37.6	11.4	9.	30.1	74.5*	96.2
62009	17 CH244	112.4 A	92.3 C	92.3 C	10.1	80.1	10.3	1.45	36.4	9.1	9.	27.9*	77.3	126.5
62010	19 CH255	84.2 F	72.4 F	72.4 F	10.3	79.6	11.1*	1.60	35.2*	14.0*	10.	27.5*	73.4*	85.4
62011	20 CH256	97.5 B	84.0 D	84.0 D	10.4	78.9*	10.4	1.58	38.1	11.9	10.	30.3	74.7*	101.5
62012	21 CH257	102.4 A	76.3 F	76.3 F	10.6	80.7	10.4	1.67	35.3*	10.7	9.	27.7*	75.9	111.2
62013	22 CH260	110.9 A	105.8 A	105.8 A	10.2	80.2	10.4	1.53	39.7	8.9	9.	31.8	76.9	119.8
62014	23 CH265	96.1 B	90.0 C	90.0 C	9.6	79.4*	10.0	1.60	37.9	12.9*	9.	34.1	74.3*	95.5
62015	PTINAFER X409D STANDARD	101.3 A	84.0 E	84.0 E	10.3	80.9	10.7	1.45	39.9	11.5	10.	32.1	75.3	104.5
		100.0 A	100.0 A	100.0 A	10.3	80.2	10.2	1.62	38.1	11.3	9.	30.1	75.8	102.4

STRAIGHT-GRADE FLOUR

LAR NO	MOIS. PCT.	ASH PCT.	PROT. PCT.	VISC. AS IS MACH	VISC. ADJ. MACH	MICRO AMRC PCT.	COOKIE DIAM. CM	TOP GRAIN
62001	14.2	38	9.0	57	73	54.00	17.8*	5
62002	13.7	41	8.9	67	93	50.2	16.1	7
62003	13.9	39	8.4	49	79	52.5*	17.4*	7
62004	13.6	36	8.1	49	121*	51.0	17.7*	7
62005	13.7	38	8.2	52	87	50.2	16.0	7
62006	14.0	39	10.1*	94	69	54.6*	17.6*	5
62007	13.8	40	8.1	44	78	50.0	18.1	8
62008	13.9	40	8.7	37	53	50.7	18.0	6
62009	14.1	37	9.2	67	82	50.4	17.9	6
62010	14.1	39	9.9*	70	70	52.3*	17.4*	6
62011	13.9	36	9.5*	61	92	51.2	17.7*	6
62012	14.2	38	9.0	49	61	51.9*	17.4*	4
62013	14.2	39	9.2	61	76	49.5	18.2	7
62014	14.1	36	8.6	62	67	51.4	17.8*	6
62015	13.8	39	9.6*	74	79	52.9*	17.7*	5
	13.7	41	8.9	67	91	50.2	16.1	7

Exhibit EStatement of the Basis of Applicant's Ownership

The original cross, early line evaluation, selection, reselection/purification and final multiplication were all performed by the applicant breeder (Dr. H. N. Lafever) or his technical assistants on the property of the Ohio State University, Ohio Agricultural Research and Development Center utilizing funds provided for such research. Ownership of the variety shall remain with the Ohio State University, Ohio Agricultural Research and Development Center, however, through the Ohio State University Research Foundation, exclusive rights to produce, promote, and market this variety have been granted, by contract, to the Agricultural Genetic Research Association.